

GC Capillary Column Ferrules



Tech Tip:

Signals that a ferrule is damaged include:

- background noise from oxygen diffusing into the system
- column bleed catalyzed by oxidation
- sample degradation
- loss of sample
- increase in detector signal noise
- poor retention time reproducibility

General techniques for installing ferrules:

- don't overtighten—fingertighten column nut, then use wrench to tighten 1/4 turn
- maintain cleanliness
- bake out ferrules prior to use
- avoid contamination—fingerprints, oils
- change ferrules when new columns or injector/detector parts are installed

Agilent Capillary Column Ferrules

General Purpose Graphite Ferrules (Short Ferrules)

Cat. No.	Ferrule ID	Column ID	Qty.
500-2114	0.4mm	0.05 - 0.25	10
5080-8853	0.5mm	0.1, 0.2, 0.25, 0.32	10
5080-8773	1.0mm	0.53	10

85% Vespel, 15% Graphite Ferrules (Short Ferrules)

5181-3323	0.4mm	0.1, 0.2, 0.25	10
5062-3514	0.5mm	0.32	10
5062-3512	0.8mm	0.45, 0.53	10

85% Vespel, 15% Graphite Ferrules (Precond. Long Ferrules)*

5062-3507	0.3mm	0.1	10
5062-3508	0.4mm	0.1, 0.2, 0.25	10
5062-3506	0.5mm	0.32	10
5062-3538	0.8mm	0.53	10

* These ferrules are recommended for use with GC/MS

100% Vespel High Performance Ferrules (Short Ferrules)**

5181-3322	0.4mm	0.1, 0.2, 0.25	10
5062-3513	0.5mm	0.32	10
5062-3511	0.8mm	0.45, 0.53	10

** These ferrules are recommended for use in isothermal analysis only

Column Nuts

5181-8830	Universal column nut, 1/16" hex	2
5020-8292	Column nut for 0.32mm columns***	1
5020-8294	Blanking plug, finger-tight style	1
05988-20066	Long nut, MS interface	1
05921-21170	Long column nut, for GC/MS ferrules	1
8710-0510	Column nut wrench, 1/4" and 5/16"	1

*** For use with graphite ferrules only



100% Graphite Ferrule

- One-piece design (requires NO back ferrule)
- Usable to 450° C
- Not recommended for GC/MS connections

Agilent

Cat. No.	Ferrule ID	Column ID	Qty.
11-08851	0.4mm	.05 - .25	10
072635	0.5mm	.1 - .32	10
11-08852	0.5mm	.1 - .32	10
072636	0.8mm	.45 - .53	10
11-01042	0.8mm	.53	10
11-08773	1.0mm	.53	10

Perkin Elmer

072627	0.5mm	.1 - .32	10
072626	0.8mm	.45 - .53	10

Shimadzu

0726080	0.5mm	.1 - .32	10
0726082	0.8mm	.45 - .53	10
0726001	5.0mm	5.0mm OD Column	10

Shimadzu, for 2010 injector

072635	0.5mm	.1 - .32	10
072636	0.8mm	.45 - .53	10

Varian

072627	0.5mm	.1 - .32	10
072626	0.8mm	.45 - .53	10
072622	1/8"	1/8" OD Column	10
072621	1/4"	1/4" OD Column	10

Ferrules for 1/16" fittings

11-11604	0.4mm	.05 - .25	10
11-11605	0.5mm	.32	10
072608	0.8mm	.53	10
11-11608	0.8mm	.53	10

Ferrules for 1/8" fittings

11-18004	0.4mm	.05 - .25	10
11-18005	0.5mm	.32	10
072622	1/8"	1/8"	10
11-18000	1/8"	1/8" OD Column	10

Ferrules for 1/4" fittings

11-14000	1/4"	1/4" OD Column	10
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GC Capillary Column Ferrules



Graphitized Vespel™ Ferrules

- Low emissions— for GC/MS interfaces
- Upper temperature limit 350°C
- One-piece design (requires NO back ferrule)
- 15% Graphite / 85% Vespel composite, unless noted otherwise

Agilent Short Ferrules not for GC/MS (15% Graphite)

Cat. No.	Ferrule ID	Column ID	Qty.
073109	0.4mm	.1 - .25	10
073111	0.5mm	.32	10
073113	0.8mm	.53	10

Agilent Long Ferrules for GC/MS (15% Graphite)

072663	0.4mm	.1 - .25	10
072654	0.5mm	.32	10
072655	0.8mm	.53	10

Agilent (40% Graphite / 60% Vespel)

13-11694	0.4mm	.05 - .25	10
13-11695	0.5mm	.32	10
13-01042	0.8mm	.53	10
13-08773	1.0mm	.53	10

Perkin Elmer not for GC/MS (15% Graphite)

072663	0.4mm	.1 - .25	10
072654	0.5mm	.32	10
072655	0.8mm	.45 - .53	10

Shimadzu, for QP5000-I for GC/MS (15% Graphite)

0726563	0.4mm	.1 - .25	10
0726564	0.5mm	.32	10

Shimadzu, for QP5000-II and QP5050 for GC/MS (15% Graphite)

0726561	0.4mm	.10 - .25	10
0726562	0.5mm	.32	10

Shimadzu, for 2010 for GC/MS (15% Graphite)

072663	0.4mm	.1 - .25	10
072654	0.5mm	.32	10
072655	0.8mm	.45 - .53	10

Ferrules, for 1/16" fittings (40% Graphite / 60% Vespel)

13-11604	0.4mm	.05 - .25	10
13-11605	0.5mm	.32	10
13-11608	0.8mm	.53	10
13-11600	1/16"	1/16" OD Column	10

Ferrules, Short, for 1/16" fittings (15% Graphite)

073109	0.4mm	.1 - .25	10
073111	0.5mm	.32	10
073113	0.8mm	.53	10

Ferrules, for 1/8" fittings (15% Graphite)

072671	0.8mm	.53	10
072669	1/8"	1/8" OD Column	10

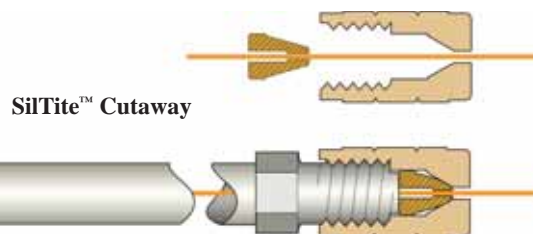
SGE SilTite™ Leak Free Connections

The SilTite metal ferrules have been developed specifically for use with GC/MS systems and have distinct advantages over graphite and composite ferrules for use with GC/MS interfaces:

- Forms a strong permanent airtight seal around the capillary column — No more leaks!
- Forms a perfect seal with the MS interface, covering the whole transfer line
- Since SilTite is a metal ferrule, the risk of MS source contamination is completely eliminated
- Nut never needs re-tightening!



SilTite nuts with the distinctive two notches.



SilTite™ Starter Kit for GC/MS Interface Connection

Cat. No.	Ferrule ID	Column ID	Qty.
073200	0.4mm	.1 - .25	10*
073201	0.5mm	.32	10*

* Includes 10 SilTite™ ferrules, 2 SilTite™ nuts.

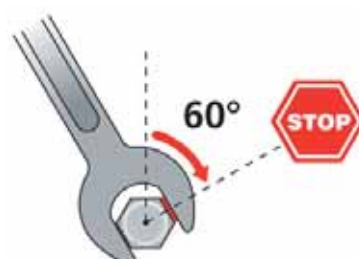
Replacement SilTite™ Metal Ferrules for all instruments

073220	0.4mm	.1 - .25	10
073221	0.5mm	.32	10

Replacement SilTite™ Nuts

073224	Nut for GC/MS interface	5
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The SilTite™ connections listed above are designed to fit Agilent, Perkin Elmer and the Shimadzu 2010 system. For a complete list of connections compatible with other instrument manufacturers, contact Chrom Tech customer service.




SilTite™ Installation

For easy installation, gradually tighten the nut until the ferrule just begins to hold the fused silica. Then tighten a further 60°. A leak-tight seal is guaranteed.


GC Supplies

Agilent Fittings

Unions

Cat. No.	Description		Qty.
0100-1316	Brass, 1/16"		1
5180-4127	Brass, 1/8"		2
5180-4128	Brass, 1/4"		2
0100-0124	Stainless steel, 1/16"		1
0100-0126	Stainless steel, 1/8"		1
0100-0128	Stainless steel, 1/4"		1


Tees

5180-4160	Brass, 1/8"		2
5180-4129	Brass, 1/4"		2
0100-0782	Stainless steel, 1/16"		1
0100-0542	Stainless steel, 1/8"		1
0100-0089	Stainless steel, 1/4"		1


Crosses

0100-0161	Brass, 1/8"		1
0100-0985	Brass, 1/4"		1


Reducing Unions

5180-4130	Brass, 1/8" x 1/16"		2
5180-4131	Brass, 1/4" x 1/8"		2
0100-0241	Stainless steel, 1/8" x 1/16"		1
0100-0121	Stainless steel, 1/4" x 1/8"		1


Nuts

5180-4103	Brass, 1/8"		10
5180-4105	Brass, 1/4"		10
5180-4102	Stainless steel, 1/16"		10
5180-4104	Stainless steel, 1/8"		10

Front Ferrules

5180-4109	Brass, 1/8"		10
5180-4111	Brass, 1/4"		10
5180-4108	Stainless steel, 1/16"		10
5180-4110	Stainless steel, 1/8"		10

Back Ferrules

5180-4113	Brass, 1/16"		10
5180-4115	Brass, 1/8"		10
5180-4117	Brass, 1/4"		10
5180-4114	Stainless steel, 1/16"		10
5180-4116	Stainless steel, 1/8"		10

Plugs

5180-4124	Brass, 1/8"	6
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Blanking Nut

01080-83202	Brass, 1/8"	6
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Connectors Sagelok-style to Male NPT

5180-4143	Brass, 1/8"T x 1/4"P		2
5180-4145	Brass, 1/4"T x 1/4"P		2

Connectors Sagelok-style to Female NPT

0100-0118	Brass, 1/8"T x 1/4"P	1
0100-0119	Brass, 1/4"T x 1/4"P	1

Agilent Liner O-Rings

- Liners are sealed in the inlet with O-rings or graphite seals
- Fluorocarbon O-ring seals are easier to replace than graphite that deforms and flakes apart
- Graphite seals are used when inlet temperatures exceed 350°C



Cat. No.	Description	Qty.
5180-4182	Fluorocarbon O-ring	12
5180-4173	Graphite O-ring for splitless liner	10
5180-4168	Graphite O-ring for split liner	10
5188-2741	Inlet liner O-ring for Flip Top	10



Glass Column Connectors/Splitters

Cat. No.	Glass Press-Fit Connector for:	Qty.
5041-2178	.1 to .1mm tubing	10
5062-3556	.25 to .25mm tubing	10
5062-3554	.32 to .25mm tubing	10
5041-2174	.32 to .32mm tubing	10
5062-3551	.53 to .25mm tubing	5
5041-2171	.53 to .53mm tubing	10

Cat. No.	Glass Press-Fit Splitter for:	Qty.
5062-3549	250µm columns	1
5041-2179	320µm columns	1

Polyimide Sealing Resin

Cat. No.	Description	Qty.
500-1200	Polyimide sealing resin	5 grams

Quartz Capillary Column Connectors

Cat. No.	Description	Qty.
5181-3395	Connector, .1-.53mm	5
5181-3396	Deactivated connector, .1-.53mm	5

Metal Capillary Column Connectors

Cat. No.	Description	Qty.
5061-5801	Connector, body and nut	1

Vespel Ferrules for Connecting:

5061-5804	.2 to .53mm ID tubing	2
5061-5805	.32 to .32mm ID tubing	2
5061-5806	.32 to .53mm ID tubing	2

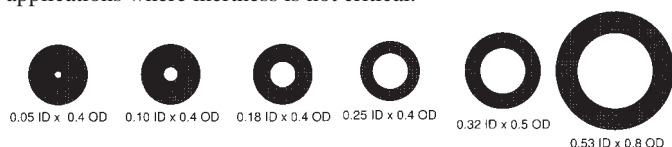
Fused Silica Tubing

- For retention gaps
- For guard columns
- For transfer lines

A short length of deactivated fused silica tubing attached to the front of the analytical column can serve:

1. As a “retention gap” – it permits large volumes to be injected onto an open tubular column without adversely effecting solute resolution.
2. As a **guard column** – it provides a place where nonvolatile residues tend to accumulate preventing contamination of the analytical column.

Undeactivated fused silica tubing is commonly used for capillary electrophoresis. It can also be used for transfer lines and other applications where inertness is not critical.



Fused Silica, Deactivated

Cat. No.	Description
160-2655-X	0.05mm ID Deactivated FS tubing
160-2635-X	0.10mm ID Deactivated FS tubing
160-2615-X	0.18mm ID Deactivated FS tubing
160-2205-X	0.20mm ID Deactivated FS tubing
160-2255-X	0.25mm ID Deactivated FS tubing
160-2325-X	0.32mm ID Deactivated FS tubing
160-2455-X	0.45mm ID Deactivated FS tubing
160-2535-X	0.53mm ID Deactivated FS tubing

ProSteel Stainless Steel, Deactivated

160-4535-5	0.53mm ID, 5m, Deactivated ProSteel
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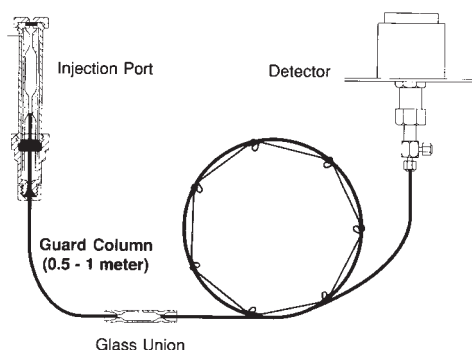
Fused Silica, Undeactivated

160-2650-X	0.05mm ID Undeactivated FS tubing
160-2634-X	0.10mm ID Undeactivated FS tubing
160-2610-X	0.18mm ID Undeactivated FS tubing
160-2200-X	0.20mm ID Undeactivated FS tubing
160-2250-X	0.25mm ID Undeactivated FS tubing
160-2320-X	0.32mm ID Undeactivated FS tubing
160-2450-X	0.45mm ID Undeactivated FS tubing
160-2530-X	0.53mm ID Undeactivated FS tubing

Replace “X” with length in desired meters:

Deactivated Fused Silica: 1, 5, or 10 meter lengths available

Undeactivated Fused Silica: 5 or 10 meter lengths available



Tubing Cutters



Magnifier, Mirror, Microprobes

Fused Silica Tubing Cutters

We offer two conveniently designed, pencil-shaped tools and ceramic wafer that allow you to make clean and easy cuts in fused silica, glass and aluminum-clad capillary columns.

Cat. No.	Description
420-2000	Sapphire column cutting tool
420-1000	Diamond tipped pencil
5181-8836	Column cutting wafer, 4/pk

Magnifier, Mirror, and Microprobes

Examine column ends for proper cuts. Jagged, rough, or nonperpendicular cuts negatively affect chromatographic performance.

Hardened stainless steel probes remove septum and ferrule pieces stuck in fittings. Five different styles give you all of the angles necessary for getting into those hard-to-reach places.

Cat. No.	Description
430-1020	20x magnifier
707-0027	Mirror
RMP-5005	Five microprobes



Ferrule Tool



Septum Tool



Cleaning Wires

Ferrule Tools

Removes ferrules stuck inside fittings. Screw the stainless steel ferrule tool into the ferrule and pull it out. The column ferrule installation tool positions a ferrule onto a capillary column for proper installation.

Cat. No.	Description
RFT-2500	Capillary ferrule tool (0.25-0.32mm)
RFT-5300	Megabore ferrule tool (0.53mm)
440-1000	Ferrule tool
19251-80680	Column ferrule installation tool

Miscellaneous Tools

450-1000	Septum tool
5180-4153	Capillary inlet cleaning wires, 5/pk
5080-5400	Swabs, 100/pk

GC Supplies



Column Install Kit



Column Rinse Kit

GC Column Installation Kit

The capillary column installation kit contains:

- **Diamond-tipped pencil**
- **20x magnifier**
- **Ferrule removal tool**
- **Septum removal tool**
- **Refillable 2 oz bottle of Snoop**

Cat. No.	Description
430-2000	Kit with diamond-tipped cutting pencil

GC Column Rinse Kit

This kit makes solvent rinsing easy! Solvent rinsing removes many contaminants that accumulate in columns. The contaminants are removed by passing solvents through the column. Only bonded and cross-linked phase columns should be rinsed, or permanent damage to the column will result.

Cat. No.	Description
430-3000	Capillary rinse kit

Injection Port Cleaning Kit



- **4 Stainless Steel brushes: 1/8", 3/16", 1/4" and 3/8"**
- **Scraper to remove residue**

Cat. No.	Description
124500	Injector cleaning kit

FID Cleaning Kit



This easy-to-use maintenance kit improves sensitivity, reduces noise and decreases detector spiking.

Cat. No.	Description
9301-0985	FID cleaning kit

LD-228 Helium Leak Detector

- **Detection limits as low as 0.01mL/min. for He**



This rechargeable gas leak detector is designed for the detection of helium gas. It is fast, reliable and very easy to use. The pen-sized sample probe proves handy in confined spaces.

The detection principle of the new LD-228 Helium Gas Leak Detector is based on the difference in thermal conductivity between the sample gas and atmosphere. The detector contains a high sensitivity thermistor actuated cell and a vacuum sample intake.

When a leak is detected through the monitoring probe, an elevated reading occurs on the LED level meter and an alarm buzzer sounds.

Cat. No.	Description
AL60229	LD-228 Helium gas leak detector

Snoop

Leak test most pressurized gas systems. We recommend that leak detecting solutions be used with care where there is any possibility of the fluid being aspirated into gas flow streams supplying the column or detector. This squeezable bottle comes with a "Snooper Tube" extendable up to 12 inches.

Cat. No.	Description
9300-0311	Snoop - 8 ounce bottle

Glas-Treet

- **Used to deactivate active sites found in glassware, chromatography columns, and glass wool**
- **Does not coat glass; renders it inactive chemically**

Cat. No.	Description
970069	Glas-Treet, 4 x 25mL

Col-Treet

- **Silylating mixture designed for conditioning gas chromatography columns**
- **Eliminates peak tailing, peak broadening and residues which may reduce column efficiency**

Col-Treet is NOT to be used with any hydrogen bonding stationary phases such as CARBOWAX® or phases with active hydrogen sites.

Cat. No.	Description
970130	Col-Treet, 10 x 1mL
970131	Col-Treet, 4 x 5mL

Gas Cylinder Regulators

To plumb your system properly, select one of our economical brass regulators and the proper gas purification devices from our newly expanded product offering. These regulators and our broad spectrum of in-line filters, combination traps, and gas purification systems are an excellent combination to plumb your systems.

Helpful Hint: Always depressurize a regulator before closing the adjusting knob and removing the regulator from the cylinder.

Brass Body, Dual Stainless Steel Diaphragms

Specifications:

Max inlet pressure:	3000 psi
Operating temp:	-40°F to 165°F
Inlet-outlet port:	1/4" Male NPT
Outlet valve:	1/4" Male NPT
	2 1/2" Dual scale gauges
	CGA-346, 350, 340, 580, 590
	Internal self-reseating relief valve
Delivery pressure:	1 to 125 psi
Weight:	5.6 lbs

Materials of Construction:

Body:	Brass
Bonnet:	Brass
Diaphragms:	Stainless Steel
Seat material:	PTFE
Seat assemblies:	Encapsulated
Gauges:	Brass
Adjusting knob:	ABS plastic
Outlet needle valve:	Brass



Cat. No.	Description
5183-4641	CGA 346, 125 psi max, Air
5183-4642	CGA 350, 125 psi max, H ₂ , Ar/Me
5183-4643	CGA 540, 125 psi max, O ₂
5183-4644	CGA 580, 125 psi max, He, Ar, N ₂
5183-4645	CGA 590, 125 psi max, Air

For 1/4" tubing, purchase a 1/4" adapter, listed below.

Regulator Outlet Adapters—Female NPT to Swagelok-style

Cat. No.	Description
0100-0118	1/4" to 1/8" brass (included with regulators)
0100-0119	1/4" to 1/4" brass*

* Required for plumbing 1/4" tubing to regulators above



6890/6850 Split Vent Trap



Spectra-Link Tubing Connecting System
on a two-stage regulator

Spectra-Link Flexible Tubing

- **Stainless Steel:** no outgassing or permeation through polymeric materials
- **Quick Connection:** prevents air from entering gas lines during tank changeover
- **Tested:** each system has leak rates < 1 x 10⁻⁵ cc/sec

Cat. No.	Description
SL-8	Spectra-Link 36" SS line with 1/8" ftgs
SL-4	Spectra-Link 36" SS line with 1/4" ftgs

Copper Tubing—Precleaned

5180-4196	Copper tubing, 1/8", 50 ft
5021-7107	Copper tubing, 1/8", 12 ft



Universal/External Split Vent Trap

Split vent trap stops environmental pollution. The split vent trap was designed to protect the lab environment from the contaminants released by split injection systems, which can vent up to 500 times the amount of sample reaching the detector into the laboratory's air. A replaceable, impregnated carbon filter media traps and eliminates a broad range of contaminants. Replace approximately every six months.

Cat. No.	Description
RDT-1020	Split vent trap with 3 cartridges (1/8" Swagelok fitting)
RDT-1023	3-pack of replacement cartridges

Replacement Split Vent Trap for 6890/6850	
G1544-80530	2 replacement filters, 4 O-rings